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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NALCO COMPANY 1601 W. DIEHL ROAD NAPERVILLE, IL 60563-1198			EXAMINER METZMAIER, DANIEL S	
			ART UNIT	PAPER NUMBER
			1796	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/034,661	<b>Applicant(s)</b> TREYBIG ET AL.	
	<b>Examiner</b> Daniel S. Metzmaier	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-14, 16-28, 30, 31, 33-40, 42-53 and 55-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-46, 48, 52 and 55-60 is/are allowed.
- 6) ☒ Claim(s) 4-14, 16-23, 26-28, 30, 31, 33-36, 38, 40, 43, 47, 53 and 61-63 is/are rejected.
- 7) ☒ Claim(s) 24, 25, 37 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Claims 4-14, 16-28, 30-31, 33-40, 42-53 and 55-63 are pending.

#### ***Claim Interpretation***

1. The claims 5, 16-28, 30-31, 33-40, 42-53 and 55-63 are drafted in product-by-process format. See MPEP 2113. It is noted that claims 61-63 employ open language, i.e., "comprising", defining the agent or monomer, e.g., amine-containing monomer. The reactants are open to more than the recited amine compounds having only two reactive amino hydrogen groups claimed provided said recited groups are present or would have been obvious reactants.

Claims 4 and 6-14 are indefinite.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 6-14, 16-26, 38, 40, 47, 53 and 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 6-14, 38 and 40 are dependent directly or indirectly on cancelled claim 3 or cancelled claim 32.

Claims 18-26 are indefinite since it is unclear what is applicants intended materials since the claim requires an amine capping monomer and an amine alkylating agents, i.e., said amine capping monomer would no longer be an amine capping monomer but a polymeric amine. The amine capping agents are not distinct from the

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amine reactants of claim 61 or 62. Thus, the ratio defined therein is unclear since it is unclear how much of the amines should be attributed to the ratio that are the amine reactants of claims 61 or 62 and how much of the amine capping agents, wherein both read on the same materials.

Since the claims employ open transitional language, i.e., comprising, and only define groups of the reactants, it is unclear what are the metes and bounds of the claims. It is unclear whether an oligomer, i.e., a partial product of a glycidyl compound with an amine with greater than two reactive hydrogens, is a reactive amine containing only two reactive amino hydrogens. It is unclear whether said oligomers are excluded from the molar ratio.

It is unclear how 47 can further contain polyglycols since they form part of the reactants in claim 44.

R is undefined in claim 53.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 4-5, 16-23 and 60-63 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Applicants characterization (pages 7 and 8 of the instant specification) of aliphatic or cycloaliphatic epoxides or glycidyl compounds clearly includes glycol ethers as examples aliphatic or cycloaliphatic compounds. Please compare claim 5, which includes a polyether as an aliphatic compound.

Regarding claim 51, the N,N-dimethylaminopropylamine reads on the capping amine monomer and the alkylating agent is indistinct from the reaction products having complete reaction of the diglycidyl ethers or epihalohydrin capped diols since the

product structures are indistinct and the halogen is a reaction by-product. Attention is further directed to claim 60(3).

Claim 60 is included in this rejection since 2,2'-aminoethoxyethanol reads on claim 60, 1)(b); when R1 is  $(-\text{CH}_2-\text{CH}_2-\text{O}-)_n$ ,  $n = 2$  and  $Z1 = \text{H}$ . DER 732 reads on components 2) and 3), which are indistinct in the final product when R8 is 2-hydroxy-3-chloropropyl. The terminal halogens would react and expected to form the same reaction products as the diglycidyl ethers. Said products reactive with the free amine nitrogens and forming a 2-hydroxypropyl linkage.

To the extent the claimed products defined by the product-by-process limitations would be different, Ott et al teaches each of the reactants for the claimed materials. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the reactants as disclosed in Ott et al for the advantage of making the grinding aids taught in the Ott et al reference.

8. Claims 4, 6-10, 18-23, 26-28, 30-31, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Ott et al differs from the claims in the use of a particular polyglycidyl ether, complete reaction of the polyglycidyl ether to form the same reaction product of N-alkylating agents when the N-alkylating agents are capped with 2-hydroxy-3-

chloropropyl, or the residual by-product chloride or bromide resulting from N-alkylating agents are capped with 2-hydroxy-3-chloropropyl.

Ott et al (column 6, lines 27 et seq; particularly lines 55 and 62-65) disclose a number of polyglycidyl ether or polyepoxides including but not limited to those derived from epihalohydrins, glycerol, and polyepoxide derived from the epoxidation of olefins.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the polyglycidyl ether or polyepoxides taught in the Ott et al reference as an obvious functional equivalent to the DER 732 or the epoxy resins exemplified.

To the extent the Ott et al reference differs in that the reaction of the polyglycidyl ethers are incomplete, less than 100%, or the compositions contain some residual by-product halogen, the Ott et al reference teaches the use of alternative polyglycidyl ethers and/or polyepoxides derived from epihalohydrins. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ the materials derived from epihalohydrins as an obvious functional equivalent to the polyglycidyl ethers and/or polyepoxides exemplified, which would have resulted in polymer compositions having the same or substantially the same structure. See MPEP 2113.

***Allowable Subject Matter***

9. Claims 42-46, 48-53 and 55-60 are allowed.

10. Claim 47 is would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. Claim 24, 25, 37 and 39 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

12. Applicant's arguments filed 13 March 2008 have been fully considered but they are not persuasive.

13. Applicants assert the alternative language excludes other reactants. This is not agreed and is inconsistent with the claims as drafted. See claim 47 as an example, which is a further reactant of claim 44 employing the same alternative language.

14. Applicants assert the capping agents are distinguished from the other reactants both structurally and by methods of preparation. This has not been deemed persuasive since the claims are directed to composition claimed by product-by-process format and applicants have not met their burden of showing that the said process limitations distinguish over the materials of the prior art.

15. Applicants' remarks regarding the backbone and/or capping of the polymer have not been deemed persuasive since there is no showing of structural analysis and/or degree of polymerized specified structure defined in the claims. Some capping would have been expected.



16. Applicants assert the Ott reference is not applicable to the claims based on applicants' interpretation of their claimed product-by-process format. This not agreed to for the above reasons and has been addressed above.

17. Applicants' claims do not exclude aromatic components and Ott contemplates both aromatic and non-aromatic components.

18. Applicants make, essentially, the same arguments regarding the obviousness of Ott as the anticipation of Ott. These reasons have been addressed above and have not been deemed persuasive.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**/Daniel S. Metzmaier/  
Primary Examiner, Art Unit 1796**

DSM